



THE COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF LABOR
DIVISION OF OCCUPATIONAL SAFETY
OCCUPATIONAL HYGIENE / INDOOR AIR QUALITY PROGRAM
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USE OF SAFETY NEEDLES (SAFER MEDICAL DEVICES)
for prevention of bloodborne diseases

What are safer medical devices?

Safer medical devices have replaced the older type of syringe and exposed needle. These new devices are designed to prevent a worker from getting accidentally injured from a needlestick or from another type of sharp instrument. They include, for example:

- a syringe with a protective shield surrounding the needle; or
- a syringe with a retractable needle; or
- a lancet with a retractable blade; or
- a device with a blunt tip; or
- a device that has no needle.



Why use safer medical devices?

Safer medical devices prevent needlestick injuries that have the potential to cause serious diseases due to bloodborne pathogens. These diseases, which can be fatal, include Hepatitis B, Hepatitis C, and Acquired Immunodeficiency Syndrome (AIDS). Once a person becomes infected with any of these diseases, there is no cure.

In 2000, the United States General Accounting Office indicated that, according to CDC (Centers for Disease Control and Prevention) survey data, most needlestick injuries occur after the device has been used but before its disposal, i.e., from dirty needles. This would therefore, expose the individual to potentially contaminated blood.

CDC estimated that before safer medical devices were in use, there were over 500,000 injuries every year with contaminated sharps. (OSHA – Supplementary Information to Amended Final Rule)



What standards require use of safer medical devices?

The OSHA standard on bloodborne pathogens (29 CFR 1910.1030) which applies to all private sector workplaces, took effect in 1992. In 2001, the standard was amended to clarify the requirement to use safer needles in accordance with the federal Needlestick Safety and Prevention Act of 2000.

Since 2000, hospitals (including public ones) in Massachusetts have been required to use safer devices (M.G.L. Ch. 111F Section 53D). Based on legislation overhauling the Medicare system, as of July 1, 2004, all public sector hospitals nationwide are required to comply with the OSHA standard (including the safer needle provisions)

More than half of the states in the U.S. cover their public sector workers, such as municipal workers, with OSHA standards or the equivalent. In Massachusetts, although public sector workers are not covered by OSHA, the Massachusetts Division of Occupational Safety (DOS) can set standards for municipal worker occupational health under MGL Chapter 149 section 6. It is the policy of the Division of Occupational Safety that in order to meet the intent of Chapter 149 section 6, municipalities should comply with OSHA standards, including the standard on bloodborne pathogens.

Have the number of injuries declined with the use of safer needle systems?

Statistics show that safer needle devices markedly reduce the number of accidental needlesticks. From 1993 to 2001, data indicate a 59% overall decline in needlesticks (percutaneous injuries) for disposable syringes. (These accounted for the greatest number of injuries to nurses). Injection related percutaneous injuries decreased in this same time period by 39%. This decline supports the benefit of this new technology. (Advances in Exposure Prevention, Vol. 6 No.3, 2003)



How do you select which device to use?

Several different factors must be taken into consideration when selecting a safer medical device. Different devices should be evaluated to ensure that the safety feature works effectively and the device is acceptable for the workers. Workers should be involved in the evaluation process. Speaking with other public health nurses, boards of health, local hospitals and clinics may provide insight into the type of needle device that has worked well for others in similar situations.

Following are a few examples of different types of medical devices and what to consider as safety mechanisms:

- ❖ Syringes: needle should retract or be shielded while keeping both hands behind the needle;
- ❖ Pharmacy pre-loads: should include a shielding or retracting mechanism. Alternatively, an adapter can be placed on the syringe to allow shielding after use;
- ❖ Lancets: should be retractable and self-locking so they cannot be activated a second time;
- ❖ IV stylets: needle should be sheathed when withdraw from patient.



Is there a differential cost associated with using this type of device?

The cost associated with even one accidental needlestick far outweighs any additional cost for purchasing the safer needles. In 1999, the Massachusetts Nurses Association calculated that the cost associated with a needlestick injury to a registered nurse would be \$1800. This figure does not include additional cost if (s)he actually developed a disease.

The American Hospital Association calculated that one case of serious injury due to bloodborne pathogens can result in \$1,000,000 of employer costs related to medical testing that is needed; follow-up health care; lost time; and disability payments.

These numbers also do not take into consideration the cost of human suffering and the emotional toll, which in some cases, could be significant.



What else needs to be done to protect nurses and other workers against bloodborne diseases?



In addition to the use of safer medical devices, a comprehensive program should be in place to decrease risk of disease. These measures include providing:

- The Hepatitis B vaccine free of charge;
- Appropriate personal protective equipment (e.g., gloves);
- Appropriate disinfectant(s) (e.g., an EPA registered tuberculocidal);
- Training on use of the safer medical devices and other aspects of bloodborne disease prevention;
- Ready availability of sharps containers (and their prompt removal before they get overfilled);
- Ready availability of post-exposure follow-up if an individual experiences an unprotected exposure.

Further Information / Resources

The **Massachusetts Division of Occupational Safety** (DOS) has a website with information on public sector worker health and safety as well as information on other issues that may impact municipal workers such as indoor air quality and Right to Know. Informational brochures are listed at the end of the Indoor Air Quality page. The website is www.state.ma.us/dos. The telephone number is 617-969-7177.

The Massachusetts **Operational Services Division** (OSD) lists statewide contracts for medical supplies. Municipalities have the option to order from this list of suppliers. Be aware that both the traditional and safety devices are available through OSD. Use caution in ordering the proper devices. OSD's website is www.mass.gov/osd.

There are other requirements in the **OSHA** standard on bloodborne pathogens (29CFR 1910.1030) for protection against bloodborne diseases. The OSHA website (www.osha.gov) provides valuable information on this and many other worker health and safety topics.

The **Centers for Disease Control and Prevention** (CDC) provides information on bloodborne pathogens and prevention of disease. Their website is www.cdc.gov.

The **National Institute for Occupational Safety and Health** (NIOSH) has information on needlestick injury prevention. A booklet, "ALERT: Preventing Needlestick Injuries in Health Care Settings" is available by calling 1-800-35-NIOSH (1-800-356-4674). NIOSH's website is www.cdc.gov/niosh

The National Alliance for the Primary Prevention of Sharps Injuries (NAPPSI) is a cooperative group working towards reducing sharps injuries. Their website is www.nappsi.org.

The International Healthcare Worker Safety Center at the University of Virginia runs the **Exposure Prevention Information Network** (EPINet). They provide information and data on many aspects of needlesticks and their prevention. Their website, <http://hsc.virginia.edu/medcntr/centers/epinet/>, includes a safety device list.